Pickleweed and Sea Lettuce: A Comparison of Macroinverterbrate Species Richness in Elkhorn Slough

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Pickleweed

Introduction:

When it comes to pickleweed and sea lettuce, most people don't know the importance they have on Elkhorn Slough. During our project field-days, we visited sites at Elkhorn Slough to collect our data. We went to pickleweed and sea lettuce habitats. The question for our project is "What is the difference between pickleweed's and sea lettuce's species richness of macroinvertabrates?" We predicted that sea lettuce would have a higher diversity of macroinverterbrates than pickleweed. Pickleweed is a terrestrial plant that grows in the salt-marshes. Our sample site was off of the bridge, along South Marsh Loop Trail. On the other hand, sea lettuce is a marine plant, and grows in the shallow waters at the slough. The sample site for sea lettuce was Whistle Stop Lagoon. By studying these habitats, we realized the damages that can be done to them, and how big of an impact they have in the slough. We believe that pickleweed and sea lettuce habitats are valuable habitats in the slough, that the destruction of them would be detrimental to the organisms that live there.

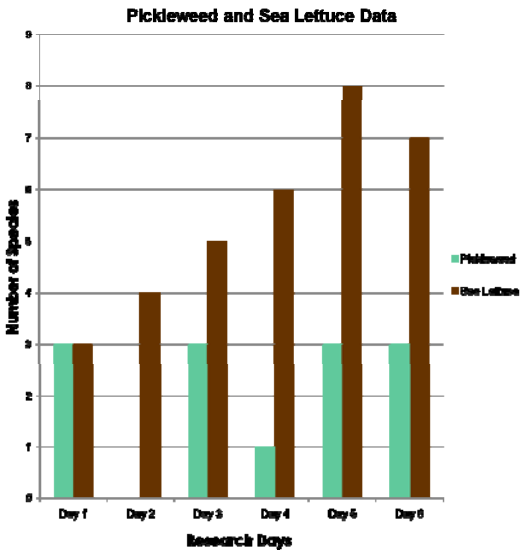
Map Elkhorn Slough- Research Sites

Materials and Methods:

During our research days, we spent five days sampling sea lettuce. The sea lettuce samples were taken at Whistle Stop Lagoon, near a levee leading to Hummingbird Island. We placed a quadrat at two places close to shore and gathered up a sample of sea lettuce and placed it in a tub. We then looked through the sea lettuce, separating all the organisms that clung to the lettuce. After we returned the sea lettuce to the water, we went to the bin and recorded all the macroinverterbrates. Afterwards we returned the organisms back to the water.

On the five days, we also sampled pickleweed. We chose four spots to sample, using quadrats. We gathered one sample container from each spot of duff, and one sample container from each spot of dirt. Duff is the top layer of the dirt, including the branches that fall off the plant. In separate tubs we emptied the containers and took turns observing what and how many species were present in each sample. After we finished with the data recordings we put the dirt and duff back.

On one of the field research days, we were unable to stay out long, due to weather problems. Quickly we gathered the samples we needed for both pickleweed and sea lettuce and headed back to the educational lab that is located at the Elkhorn Slough. At the lab we performed the same methods for the sea lettuce and pickleweed. This time we took advantage of the microscopes that were provided and looked at some samples of both the sea lettuce and pickleweed.



Overall data of pickleweed and sea lettuce findings

Sea Lettuce

Results:

Our data showed that sea lettuce had a higher population of macro-invertebrates, overall. On average, we found 2.6 macro-invertebrates in pickleweed, per day; in sea lettuce we found an average of 5.33 macro-invertebrates per day. One trend we noticed, was that between the research dates of 12/17/2010, and 1/28/2011, the sea lettuce macro-invertebrate richness increased. Although, on the last research day, 1/28/11, the abundance decreased. The pickleweed neither decreased, nor increased a significant amount, except for the research date of 12/17/10, where there was a significant decrease in macro-invertebrates.

Discussion:

In addition to researching our project question, we found that there was a lot of trash and waste throughout the saltmarshes. Although, in sea lettuce habitats there was little to know trash and waste. We believe that the trash found may have contributed to the smaller amount of macro-inverterbrates found in pickleweed, compare to the sea lettuce. Knowing that debris and other human impacts affect these habitats, it is more important to us that we spread the information from our findings. We are trying to conserve these habitats and to allow the organisms that live there to have a protected habitat. We would spread the information through numerous presentations. We are also making YouTube video, showing footage of our research days and documenting the importance of the slough. Hopefully with our video and presentation, people will interact more with Elkhorn Slough, and people will become even more knowledgeable of the importance of these two habitats, and the impact they have.

Literature Cited:

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